CLAIMS

What is claimed is:

1. A method comprising:

interrogating a subject, including a person, with electromagnetic radiation in a range of about 100 MHz to about 2 THz;

generating, from the interrogating, first image data representative of at least a portion of the person sufficient to produce a first image with a given resolution;

modifying at least a first portion of the first image data in a first manner reducing the resolution of a corresponding portion of the first image; and

displaying a modified image based on the modified portion of the first image data.

2. The method of claim 1, in which generating first image data includes generating first image data having picture elements with different levels of intensity, and reducing the resolution includes reducing the number of different levels of intensity.

3. The method of claim 2, in which reducing the number of different levels of intensity includes reducing the number of different levels of intensity to two levels of intensity.

4. The method of claim 1, in which the first image data represents picture elements having different original levels of intensity, and reducing the resolution includes replacing at least a portion of the first image data with second image data representing picture elements each of which having a level of intensity derived from a plurality of picture elements of the first image data.

5. The method of claim 4, in which replacing at least a portion of the first image data includes determining a new intensity level of a picture element as a function of the intensity level of one or more other picture elements.

6. The method of claim 5, in which determining a new intensity level includes modifying the original intensity level of each of a set of picture elements arranged relative to the given picture element, by an amount related to the position of the element relative to the given element, and combining the modified intensity levels.

7. The method of claim 6, in which determining a new intensity level includes associating a factor with each picture-element position in a group of picture-element positions relative to a reference picture-element position with at least two of the factors being different, and in which modifying the original intensity level includes multiplying the original intensity level of each picture element in the group by the factor associated with the picture element.

8. The method of claim 7, in which associating a factor includes associating a factor with each picture element in a group of adjacent picture-element positions including a center picture-element position, with the factor associated with the center picture-element position having a value greater than the value of the other factors.

9. The method of claim 7, in which associating a factor includes associating a factor with each picture element in a group of adjacent picture-element positions including a center picture-element position and edge picture-element positions, with the factors decreasing in value between the center picture-element position and the edge picture-element positions.

10. The method of claim 7, in which associating a factor includes associating a factor with each picture element in a group of adjacent picture-element positions forming at least one row of picture-element positions, with the factors of the picture-element position in the at least one row including at least one positive value and at least one negative value.

11. The method of claim 7, in which associating a factor includes associating a factor with each picture element in a group of adjacent picture-element positions forming a grid of columns and rows of picture-element positions, with the factors of the picture-element positions in each row and column alternating between positive and negative values.

12. The method of claim 1, in which generating first image data includes generating first image data having picture elements with different levels of intensity, and in which modifying at least a portion of the first image data includes increasing the number of picture elements having a first given level of intensity.

13. The method of claim 12, in which modifying at least a portion of the first image data includes, increasing the number of picture elements having a second given level of intensity different than the first level of intensity.

14. The method of claim 13, in which generating first image data includes generating first image data having picture elements with different levels of intensity in a given range of intensities, and increasing the number of picture elements having a first given level of intensity includes increasing the number of picture elements having a first given level of intensity near one end of the given range of intensities, and increasing the number of picture elements having a second given level of intensity includes increasing the number of picture elements having a second given level of intensity near the other end of the given range of intensities.

15. The method of claim 12, in which increasing the number of picture elements having a first given level of intensity includes assigning the first given level of intensity to each picture element having a given position relative to the position of a picture element having a second given level of intensity.

16. The method of claim 1, in which generating first image data includes generating first image data having picture elements with different levels of intensity, and in which modifying at least a portion of the first image data includes increasing the number of picture elements having a first given level of intensity.

17. The method of claim 1, further comprising:

identifying at least a second portion of the first image data having characteristics corresponding to characteristics of an object carried by the person; and

displaying with the modified image, an image representative of the second portion of the first image data.

18. The method of claim 17, in which generating first image data includes generating first image data having picture elements with different levels of intensity that form the image when displayed, and identifying at least a second portion of the first image data includes determining a correlation of the levels of intensity of at least one group of picture elements with the levels of intensity of a corresponding reference group of picture elements.

19. The method of claim 18, in which determining a correlation of the levels of intensity further includes replacing at least a portion of the first image data with second image data indicative of the correlation of the levels of intensity of each group of picture elements with the reference group of picture elements

20. The method of claim 19, in which replacing at least a second portion of the first image data includes determining a new intensity level of a given picture element as a function of the intensity level of one or more other picture elements.

21. The method of claim 20, in which determining a new intensity level of a given picture element includes determining a new intensity level of the given picture element that is derived from the intensity levels of a group of associated picture elements arranged relative to the given picture element.

22. The method of claim 21, in which modifying the original intensity level includes associating a factor with each picture-element in the group of picture-elements, with at least two of the factors being different, and multiplying the original intensity level of each picture element in the group by the factor associated with the picture element.

23. The method of claim 22, in which associating a factor includes associating a factor with each picture element in a group of adjacent picture-element positions forming a grid of columns and rows of picture-element positions, with the factors of the picture-element positions in each row and column alternating between positive and negative values.

24. The method of claim 1, further comprising modifying the modified first image data in a second manner producing visual distinction between a first portion of the modified first image data corresponding to at least a portion of the person and at least a second portion of the modified first image data not corresponding to a portion of the person.

25. The method of claim 24, where the modified first image data includes picture elements having respective levels of intensity, and in which modifying the modified first image data in a second manner includes modifying levels of intensity of a plurality of picture elements in at least one of the first and second portions of the modified first image data.

26. The method of claim 25, in which modifying levels of intensity of picture elements includes one or more of increasing and decreasing the levels of intensity of picture elements in the at least one of the first and second portions of the modified first image data.

27. The method of claim 24, further comprising determining a shape corresponding to the shape of the at least a portion of the person from the first image data.

28. The method of claim 27, where the first image data includes picture elements having respective levels of intensity in a range of levels of intensity, and more of the picture elements of the person have values in a given portion of the range than picture elements not of the person, and in which determining a shape includes identifying regions of the first image data for which picture elements have values in the given portion of the range.

29. An imaging system comprising:

an antenna assembly including at least a first antenna apparatus, each antenna apparatus configured to transmit toward and receive from a subject, including a person and any discernable objects with the person, in a subject position, electromagnetic radiation in a frequency range of about 100 MHz to about 2 THz, from positions spaced from the subject position, the antenna assembly producing an image signal representative of the received radiation; and

a controller adapted to produce from at least a first portion of the image signal first image data corresponding to a first image of at least a portion of the subject having a first resolution, and to modify at least a first portion of the first image data in a first manner reducing the resolution of a corresponding portion of the first image.

30. The system of claim 29, in which the controller is further adapted to generate first image data having picture elements with different levels of intensity, and to modify the at least a first portion of the first image data by reducing the number of different levels of intensity.

31. The system of claim 30, in which the controller is further adapted to generate first image data having picture elements with different levels of intensity, and to reduce the resolution by replacing at least a portion of the first image data with second image data representing picture elements each having a level of intensity derived from a plurality of picture elements of the first image data.

32. An imaging system comprising:

means for interrogating a subject, including a person, with electromagnetic radiation in a range of about 100 MHz to about 2 THz;

means for generating, from the interrogating, first image data representative of at least a portion of the person sufficient to produce a first image with a given resolution;

means for modifying at least a first portion of the first image data in a manner reducing the resolution of a corresponding portion of the first image; and

means for displaying a modified image based on the modified portion of the first image data.

33. The system of claim 32, in which the means for generating first image data is further for generating first image data having picture elements with different levels of intensity, and the means for reducing the resolution is further for reducing the number of different levels of intensity that forms the image.

34. The system of claim 33, in which the means for reducing the number of different levels of intensity is further for reducing the number of different levels of intensity to two levels of intensity.

35. The system of claim 32, in which the first image data represents picture elements having different original levels of intensity, and the means for reducing the resolution is further for replacing at least a portion of the first image data with second image data representing picture elements having levels of intensity derived from first image data representing a plurality of picture elements.

36. The system of claim 32, in which the means for generating first image data is further for generating first image data having picture elements with different levels of intensity, and the means for modifying at least a portion of the first image data is further for increasing the number of picture elements having a first given level of intensity.

37. One or more storage media having embodied therein a program of commands adapted to be executed by a computer processor to:

receive an image signal generated in response to an interrogation of a subject, including a person and any objects carried by the person, with electromagnetic radiation in a range of about 100 MHz to about 2 THz;

generate, from the received image signal, first image data representative of at least a portion of the person sufficient to produce a first image with a given resolution; and

modify at least a first portion of the first image data in a manner reducing the resolution of a corresponding portion of the first image.

38. The storage media of claim 37, in which the program embodied therein is further adapted to be executed by a computer processor to generate first image data having picture elements with different levels of intensity, and reduce the resolution by reducing the number of different levels of intensity.

39. The storage media of claim 38, in which the program embodied therein is further adapted to be executed by a computer processor to reduce the number of different levels of intensity to two levels of intensity.

40. The storage media of claim 37, in which the program embodied therein is further adapted to be executed by a computer processor to generate first image data having picture elements with different levels of intensity, and reduce the resolution by replacing at least a portion of the first image data with second image data representing picture elements having levels of intensity derived from first image data representing a plurality of picture elements.

41. The storage media of claim 37, in which the program embodied therein is further adapted to be executed by a computer processor to generate first image data having picture elements with different levels of intensity, and increase the number of picture elements having a first given level of intensity.

42. The storage media of claim 37, in which the program embodied therein is further adapted to be executed by a computer processor to identify at least a second portion of the first image data having characteristics corresponding to characteristics of an object carried by the person, and display with the modified image, an image representative of the second portion of the first image data.

43. The storage media of claim 42, in which the program embodied therein is further adapted to be executed by a computer processor to generate first image data having picture elements with different levels of intensity that form the image when displayed, and determine a correlation of the levels of intensity of at least one group of picture elements with the levels of intensity of a corresponding reference group of picture elements having characteristics of an object.

44. The storage media of claim 43, in which the program embodied therein is further adapted to be executed by a computer processor to determine a correlation of the levels of intensity by identifying at least a portion of the first image data corresponding to which there is at least a threshold correlation of the levels of intensity of the picture elements in the at least one group of picture elements, with the levels of intensity of the picture elements in the reference group of picture elements.